

## WHAT IS CLAIMED IS:

1. A web-based information management system for fleet tires, comprising:
  - a production database which receives via a distributed communications network and stores descriptive information concerning at least one physical characteristic of a plurality of tires of a fleet;
  - an information management server including data communication circuitry adapted to connect to a distributed communications network, said information management server accessing said production database for the retrieval of said descriptive fleet information for further processing; and
  - wherein said information management server has stored therein a plurality of web pages accessible by thin clients so that such thin clients may supply said descriptive information and such thin clients may receive fleet tire information.
2. The system of claim 1, wherein said information management server further includes business logic which authenticates access of the thin clients to said web pages.
3. The system of claim 2, wherein said information management server provides the web pages in a language preferred by the thin client based on said business logic authentication.
4. The system of claim 1, wherein said information management server comprises a first regional server located in a first geographic region and containing fleet tire information for said first geographic region, a second regional server located in a second geographic region and containing fleet tire information for said second geographic region, and a global server containing fleet tire information for both said first and said second geographic regions.
5. The system of claim 4, wherein said first regional server communicates with said global server, and said second regional server communicates with said global server.
6. The system of claim 4, wherein said first regional server communicates with both said global server and said second regional server, and said second regional server communicates with both said global server and said first regional server.

7. The system of claim 1, further comprising a portable computing device having a local fleet information database adapted to store at least a portion of the fleet tire information, and wherein said information management server synchronizes said production database and said local database.

8. The system of claim 7, wherein said information management server populates said production database with fleet tire information entered on said web pages from the thin clients and from said local database of said portable computing device.

9. The system of claim 7, wherein said portable computing device is a Windows CE compatible computing device having stored thereon a fleet tire management program.

10. The system of claim 7, wherein said portable computing device is a Palm compatible computing device.

11. The system of claim 7, wherein said portable computing device populates said local fleet information database with data entered thereon, and wherein said data is uploaded to said production database upon synchronization therewith.

12. The system of claim 11, wherein said portable computing device includes speech recognition capability, and wherein the data entered on the portable computing device is spoken by a user.

13. The system of claim 11, wherein said portable computing device includes a graphical illustration of a transportation vehicle's wheel and axle configuration, said graphical illustration operable to associate fleet tire information to a particular tire on the transportation vehicle.

14. The system of claim 1, wherein said information management server further comprises an analysis relational database management system (RDBMS) and an on-line analytical processing (OLAP) system, and wherein said OLAP system and said analysis RDBMS utilize the fleet tire information in said production database to generate a report based on a query from the thin client, said report being stored in said production database and available for viewing on-line by the thin client and for downloading and printing.

15. The system of claim 14, wherein said report includes projected operational cost savings calculated from the fleet tire information in said production database.

16. The system of claim 1, wherein at least a portion of said web pages presents a graphical illustration of a transportation vehicle's wheel and axle configuration, said graphical illustration operable to associate fleet tire information to a particular tire on the transportation vehicle.

17. A method of maintaining fleet tire information, comprising the steps of:

launching an Internet browser application;  
 connecting to a centralized fleet information management server through the Internet browser application;  
 transmitting authentication information to the centralized fleet information management server; and  
 accessing fleet tire information derived from information stored at the fleet information management server.

18. The method of claim 17, wherein said step of accessing comprises the steps of submitting a query to said fleet information management server, receiving a list of information satisfying the query, and selecting an item from the list of information.

19. The method of claim 18, wherein said step of submitting a query comprises the step of submitting a query containing information identifying a particular fleet.

20. The method of claim 18, wherein said step of submitting a query comprises the step of submitting a query containing information identifying a particular dealer.

21. The method of claim 18, wherein said step of submitting a query comprises the step of submitting a query containing information identifying a particular report.

22. The method of claim 17, further comprising the step of submitting fleet tire information to the fleet information management server for storage therein.

23. The method of claim 17, further comprising the step of downloading information from the fleet information management server to a portable computing device.

24. The method of claim 23, further comprising the steps of recording fleet tire information on the portable computing device, and uploading the fleet tire information from the portable computing device to the fleet information management server for storage thereon.

25. The method of claim 23, further comprising the steps of recording fleet tire information on the portable computing device, and printing a report including the fleet tire information recorded on the portable computing device.

26. A method of maintaining information concerning the tires of a fleet through a fleet tire inspection, comprising the steps of:  
launching an Internet browser application;  
connecting to a centralized fleet information management server through the Internet browser application;  
downloading fleet information to a portable computing device from the fleet information management server; and  
storing tire inspection data which is accumulated through a physical inspection of individual tires on the portable computing device.

27. The method of claim 26, further comprising the step of printing a report containing at least a portion of the tire inspection data on a portable printer.

28. The method of claim 26, further comprising the step of uploading the tire inspection data from the portable computing device to the fleet information management server.

29. The method of claim 28, further comprising, after the step of uploading, the steps of:  
selecting report components from the fleet information management server; and  
requesting the fleet information management server to generate a report using the selected report components, the report being stored on the fleet information management server.

30. The method of claim 29, further comprising the step of downloading the report.

31. The method of claim 26, wherein the step of recording comprises the step of speaking tire inspection data to the portable computing device.

32. The method of claim 26, wherein the step of recording comprises the step of accessing a graphical image depicting a wheel and axle configuration of a transportation vehicle, selecting one wheel of the graphical image, and entering tire inspection data relating to a wheel on a transportation vehicle corresponding to the selected one wheel of the graphical image.

33. A method of maintaining information through a web-based system concerning the tires of a fleet, comprising the steps of:  
launching an Internet browser application;  
connecting to a centralized fleet information management server through the Internet browser application;  
accessing a fleet tire inspection page on the fleet information management server;  
entering tire inspection data on the fleet tire inspection page on the fleet information server; and  
communicating said inspection data to the fleet management server.

34. The method of claim 33, wherein said step of accessing comprises the steps of retrieving a fleet profile for a fleet to be inspected, and selecting a fleet tire inspection page associated with the fleet to be inspected.

35. The method of claim 33, further comprising the step of requesting the fleet information management server to generate a summary report containing at least a portion of the tire inspection data.

36. The method of claim 33, further comprising the steps of:  
selecting report components from the fleet information management server; and  
requesting the fleet information management server to generate a report using the selected report components, the report being stored on the fleet information management server.

37. The method of claim 33, further comprising the step of downloading the report.

38. The method of claim 33, wherein said step of accessing comprises the steps of creating a fleet profile for a fleet to be inspected on the fleet information management server, and selecting a fleet tire inspection page associated with the fleet to be inspected.

39. A computer-readable medium having computer-executable instructions for performing steps comprising:

- storing fleet profile information in a local database;
- displaying a user interface screen having a plurality of data entry fields;
- receiving data input associated with the data entry fields;
- storing the data input in the local database;
- connecting to a web-based fleet information management server; and
- uploading the data input from the local database to the fleet information

management server.

40. The computer-readable medium of claim 39, wherein said step of storing fleet profile information comprises the steps of:

- connecting to the web-based fleet information management server; and
- downloading the fleet profile information from the web-based fleet information

management server into the local database.

41. The computer-readable medium of claim 39, wherein said step of storing fleet profile information comprises the steps of:

- displaying a fleet profile user interface screen having a plurality of profile information entry fields;
- receiving profile information associated with the profile information entry fields;

and

- storing the profile information in the local database.

42. The computer-readable medium of claim 39, wherein said step of displaying a user interface screen comprises the step of displaying a user interface screen having a graphical image of a transportation vehicle wheel and axle configuration, each wheel having corresponding data entry fields associated therewith.

43. The computer-readable medium of claim 39, wherein said step of receiving data input comprises the steps of receiving a voice signal corresponding to a data entry field, and transforming the voice signal to a data input for that data entry field.

44. The computer-readable medium of claim 39, further comprising the step of generating a summary report containing at least a portion of the data input from the local database.

45. A method of determining an operational cost savings in a fleet tire management program by addressing a tire characteristic parameter, comprising the steps of:  
selecting the tire characteristic parameter having an operational cost impact for a fleet vehicle;  
determining a number of tire samples that possess the selected tire characteristic parameter; and  
multiplying the number of tire samples by an operational cost impact factor.

46. The method of claim 45, wherein said step of determining a number of tire samples comprises the step of searching a production database to determine a number of data point samples stored therein that meet the selected tire characteristic parameter.

47. The method of claim 46, wherein the number of data point samples is less than all tires in a fleet, further comprising the step of multiplying the number of data point samples by an extrapolation factor to determine a total number of tires in the fleet that possess the selected tire characteristic.

48. The method of claim 45, wherein said step of selecting comprises the step of selecting tires that are available for retread but that are not retreaded, and wherein said step of multiplying comprises the step of multiplying the number of tire samples by a weight figure, a coefficient figure, and a market cost for crude oil to derive an operational cost savings relating to crude oil consumption.

49. The method of claim 45, wherein said step of selecting comprises the step of selecting tires that are available for retread but that are not retreaded, and wherein said step of multiplying comprises the step of multiplying the number of tire samples by a scrap cost per casing to derive an operational cost savings relating to scrapping of casings.

50. The method of claim 45, wherein said step of selecting comprises the step of selecting spare tires that are not retreaded, and wherein said step of multiplying comprises the step of multiplying the number of tire samples by the cost of spare tires and subtracting from this value the product of the number of tire samples times the cost of retread tires to derive an operational cost savings relating to the use of retreads for all spare tires.

51. The method of claim 45, wherein said step of selecting comprises the steps of selecting tires that are improperly inflated, and classifying the tires into groups based on an amount of improper inflation, and wherein said step of multiplying comprises the step of summing for all groups a product of a number of tires in each group and a service loss factor for each group to derive an operational cost savings relating to improper inflation.

52. A method for processing and communicating information pertaining to fleet tire maintenance and fleet performance comprising:

accumulating fleet data on a central production database through a distributed communications network wherein said fleet data comprises tire physical parameters including information relating to at least one physical property of a tire;

processing said fleet data to identify characteristics that present safety risks for continued unaltered use of a particular tire or group of tires of a fleet;

preparing a report to present the characteristics that present safety risks; and

transmitting said report through a distributed communications network wherein said report provides information sufficient to permit the safety concern to be removed.

53. The method of claim 52, wherein said report is communicated to a handheld computing device at the same approximate time as said handheld device is being used to input fleet data.

54. A method for processing and communicating through the web information pertinent to fleet tire management, comprising:

accumulating fleet data on a central production database through a distributed communications network wherein said fleet data comprises tire physical parameters including information relating to at least one physical property of a tire;

processing said fleet data to identify characteristics of a particular tire or group of tires of a fleet that present possibilities to improve fleet performance if the physical characteristic of particular tire or group of tires were altered;

preparing a report to present the characteristics that present opportunities to improve performance characteristics; and,



transmitting said report through a distributed communications network wherein said report provides information sufficient to permit the performance characteristics to be improved.

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